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THE TYPE OF *ULMUS AMERICANA* L.—The type of *Ulmus americana* L. has been a problem ever since the days of Asa Gray. So long as only one form of the white or American elm was recognized, the problem could be allowed to rest without disturbing taxonomists.

Now however since at least four different forms are recognized, a solution is more urgent. It becomes more important to ascertain which is the type and what are the distinctive characters of the type.

Dr. M. L. Fernald in proposing four forms stated: "so far as I can find, the actual type of Linnaeus has not been closely examined to determine to which of the four variations it belongs."¹ The photograph of the type which he had before him, he added, was "wholly inconclusive." (l.c.)

As war-time conditions doubtless made it impracticable to follow the matter further just then in order to solve the problem, the uncertainty continued through the publication of the eighth edition of Gray's Manual, which again described four forms without indicating which was typical.

Recently some correspondence with English botanists has thrown light on the question. I wish here to acknowledge with great appreciation the help of Mr. S. Savage, Assistant Secretary of the Linnaean Society of London, and especially of Dr. R. Melville, of the Royal Botanic Gardens, Kew. The latter has sent me conclusive information.

The first question is to determine with certainty what specimen is the type. In order to set forth the facts fully and avoid subsequent doubt on some points, three sheets in the Linnaean Herbarium may well be cited:

1. Sheet No. 321.1 needs to be mentioned only to eliminate it from consideration, as it is *Ulmus campestris* L. or, as that is regarded as a nomen ambiguum, it is better known as *Ulmus glabra* Huds. It has no bearing on the type of *Ulmus americana* L.

¹ RHODORA 47: 132 (1945).

2. Sheet No. 321.2 is marked "2 americana" by Linnaeus. However, Asa Gray annotated it: "est *Ulm. fulva* Michx. A. G." Dr. Melville confirms the latter determination. *Ulmus fulva* Michx. is now regarded as a synonym of *Ulmus rubra* Muhl.

3. Sheet No. 321.3 has only "Ulmus" on the front in the handwriting of Linnaeus, but on the back he has written: "Ulmus altitudinis et crassitiei minori foliis latioribus rugosis Clayt. (n. 524)." Dr. Melville writes: "The reference in the Species Plantarum to Gronovius, Flora Virginica ties up with sheet 321.3 and the words on the back of the sheet referring to Clayton's no. 524 are repeated on p. 39 of the Flora Virginica, edition of 1762." If it were not for this annotation, there might be doubt as to whether this sheet or no. 321.2 should be chosen as the type.

Dr. Melville points out that "Linneus' conception of an elm species was very broad, for he included all the rough-leaved and smooth-leaved elms of Europe known to him in his *U. campestris* (Journ. Bot. **76**: 261, 1938). There is nothing incongruous therefore in the inclusion by Linneus of both the slippery elm and the American white elm under *U. americana*. The annotation on the back of the sheet and the reference to the Flora Virginica in the Species Plantarum leave no room for doubt that Linneus intended to include sheet no. 321.3 in *U. americana*. A choice must now be made between the two elements united by Linneus for the strict application of the name under the Rules of Botanical nomenclature. Fortunately it is possible to continue the long established usage of the name by selecting as the type of *U. americana* L. sheet no. 321.3. of the Linnean herbarium."

The second question is to ascertain which of the forms is the typical. Dr. Melville describes the type (no. 321.3) as follows: It is "'Ulmus americana L.' as generally understood. It consists of a branch with fruits and young leaves. The leaves are glabrous above and are sparingly pubescent below, but this indumentum appears to be falling off and the leaves would be substantially glabrous on both sides at maturity. The young branchlets are glabrous. This sheet clearly represents *U. americana* L. f. *laevior* Fernald."

This information enables us to understand that typical *Ulmus americana* L. is the form with glabrous branchlets, and smooth (not scabrous) leaves, which Dr. Fernald (pending determination of the type) described as f. *laevior*. Forma *laevior* Fernald is therefore a synonym for typical *Ulmus americana* L.—FRANK C. SEYMOUR. TOMAHAWK, WISCONSIN.